

## 6209 ROTARY SERIES

1KΩ, 2KΩ, 5KΩ, 10KΩ, 20KΩ • Precision Position Potentiometer 7/8" Dia. Bushing Mount  
Mounting Hardware Furnished

### SPECIFICATIONS

**Industrial / Military Grade Rotary Position Sensor**

**Rotational Operating Life 100 x 10<sup>6</sup> Revolutions Min.**

**Anodized Aluminum Housing**

**Stainless Steel Shaft & Ball Bearings**

**General Requirements IAW MIL-PRF-39023**

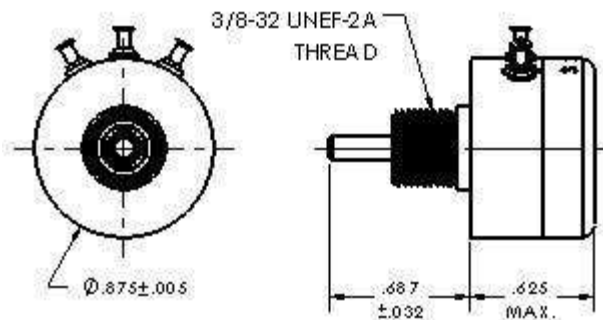
MEAS rotary potentiometer designs provide various non-linear tapers, taps, multi-sections, and electrical angles while maintaining great reliability.

### ELECTRICAL CHARACTERISTICS

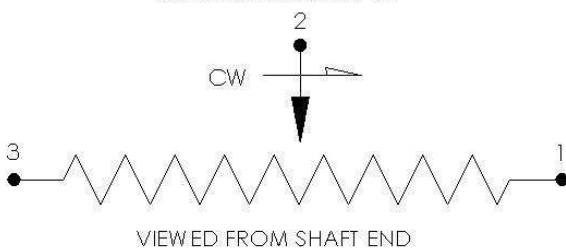
<b>RESISTANCE</b>	1KΩ to 20KΩ ±10%
<b>ACTIVE ELECTRICAL ANGLE</b>	340°
<b>ELECTRICAL CONTINUITY ANGLE</b>	344° MIN
<b>INDEPENDENT LINEARITY</b>	±0.5%
<b>END VOLTAGE</b>	0.5% MAX
<b>VOLTAGE RESOLUTION</b>	VIRTUALLY INFINITE
<b>OUTPUT SMOOTHNESS</b>	0.1% MAX
<b>RESISTANCE TEMP. COEFFICIENT</b>	400PPM/°C MAX
<b>POWER RATING @ 70°C</b>	1.0 WATT MAX
<b>WIPER CONTACT CURRENT</b>	10mA MAX
<b>DIELECTRIC STRENGTH</b>	750 VRMS @ 60Hz
<b>INSULATION RESISTANCE</b>	100mΩ MIN @ 500VDC

### FEATURES

- Less Space (7/8" Dia. Sizes)
- Greater Reliability
- Resolution
- Output Smoothness
- Special Linearity Options
- Mechanical Stops Option
- Long Life
- Various Non-Linear Tapers, Taps, Multi-sections, Electrical Angles, Special Total Resistance



SCHEMATIC DIAGRAM



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### MECHANICAL CHARACTERISTICS

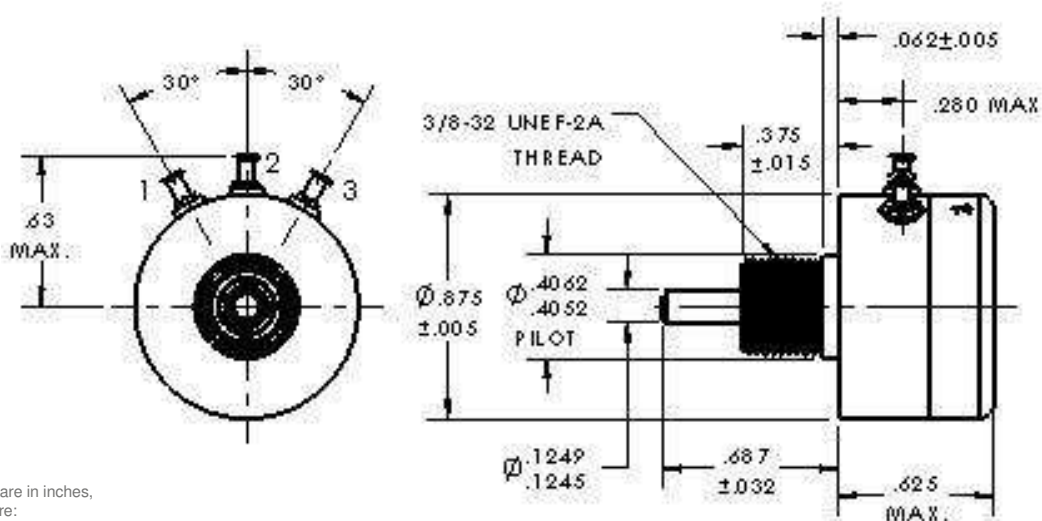
MECHANICAL ROTATION	CONTINUOUS
STARTING TORQUE	0.25 Oz.-In. MAX
RUNNING TORQUE	0.20 Oz.-In. MAX
TOTAL WEIGHT (1-GANG)	0.9 Oz. MAX
PILOT RUNOUT	0.001 In. TIR
SHAFT RUNOUT	0.001 In. TIR
SHAFT ENDPLAY	0.003 MAX
SHAFT RADIAL PLAY	0.001 In. TIR
LATERAL RUNOUT	0.002 In. TIR

### STANDARD MATERIALS

HOUSING AND COVER	ANODIZED ALUMINUM
SHAFT & BALL BEARINGS	STAINLESS STEEL
RESISTANCE ELEMENT	CO-MOLDED CONDUCTIVE PLASTIC
ELECTRICAL CONTACTS	MULTI-FINGER PRECIOUS METAL
SOLDER TERMINALS	GOLD PLATED BRASS

### ENVIRONMENTAL CHARACTERISTICS

OPERATING TEMP. RANGE	-65°C to +125°C
ROTATIONAL OPERATING LIFE	100 x 10 <sup>6</sup> REVOLUTIONS MIN.



Dimensions are in inches,  
tolerances are:  
Angular = ±2°  
.XX = ±.01  
.XXX = ±.005  
.XXXX = ±.0005

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### AVAILABLE OPTIONS / CUSTOMIZATION

- ◆ Resistance Values
  - 500 $\Omega$  to 50K $\Omega$
- ◆ Tolerances
  - As low as  $\pm 5\%$
- ◆ Special Linearity
  - As low as 0.15%
  - Absolute (Indexed)
  - Or Independent over specified regions
- ◆ Additional Taps, Current or Voltage
- ◆ Current Limit Resistors
- ◆ Internal Circuit Components
  - Caps, Diodes, etc.
- ◆ Special Electrical Angles
  - Up to 355° MAX
- ◆ Wire Leads or Cable in place of Terminals
- ◆ Special Transfer Functions
  - Non-Linear Outputs
  - Load Compensation
  - Trig, Log, & Exponential Outputs
- ◆ Multi-gang Construction
  - Up to 6 on a common shaft (+ .320 Length per gang) or concentric shafting
- ◆ Shaft Modifications
  - Lengths
  - Rear Extensions
  - Flats
  - Slots
  - Steps
- ◆ Torque or Detent
  - As low as .015 Oz-In. Starting Torque
- ◆ Mounting Features
  - Anti-rotation Locking Pins
  - Bushing Flats
  - Slots
- ◆ Rotational Stops
- ◆ Ancillary Devices
  - Spring Returns
  - Clutches
  - Brakes
  - Switches
- ◆ Environmental Capabilities
  - Moisture Seals
  - High Shock & Vibe

### ORDERING INFORMATION

Model Number:	Resistance:
6209-1000-030	1K $\Omega$ $\pm 10\%$
6209-1001-030	2K $\Omega$ $\pm 10\%$
6209-1002-030	5K $\Omega$ $\pm 10\%$
6209-1003-030	10K $\Omega$ $\pm 10\%$
6209-1004-030	20K $\Omega$ $\pm 10\%$

#### NORTH AMERICA

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